

TRIODE—PENTODE

DESCRIPTION AND RATING

The 6AU8-A is a general-purpose miniature tube which contains a sharp-cut-off pentode and a medium-mu triode in one envelope. Each section has a separate cathode and is electrically independent.

The tube is suitable for a wide variety of general-purpose applications in both monochrome and color television receivers. The high figure of merit of the pentode section makes it particularly suited for service as a video amplifier, video intermediate-frequency amplifier, and sound intermediate-frequency amplifier. The triode section is intended for use as a sync amplifier, separator, or clipper, or as a sweep oscillator. The triode section may also be connected as a diode for video-detector applications, which adds to the over-all versatility of the tube.

In addition, the 6AU8-A, as a result of its controlled heater warm-up characteristic, is especially suited for use in television receivers that employ series-connected heaters. The 6AU8-A differs from the 6AU8 primarily by incorporating a controlled plate-knee characteristic.

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC.....6.3 Volts

Heater Current.....0.6 Amperes

Heater Warm-up Time*.....11 Seconds

Direct Interelectrode Capacitances†

Pentode Section

Grid-Number 1 to Plate.....0.06 μf

Input.....7.5 μf

Output.....3.4 μf

Triode Section

Grid to Plate.....2.2 μf

Input.....2.6 μf

Output.....0.34 μf

Pentode Grid-Number 1 to Triode Plate, maximum.....0.006 μf

Triode Grid to Pentode Plate, maximum.....0.022 μf

Pentode Plate to Triode Plate, maximum.....0.12 μf

GENERAL

MECHANICAL

Mounting Position—Any

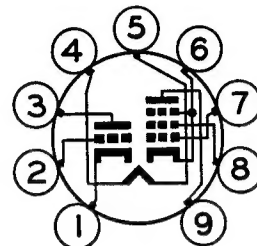
Envelope—T-6½, Glass

Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES	Pentode Section	Triode Section	
Plate Voltage.....	300	300	Volts
Screen-Supply Voltage.....	300	....	Volts
Screen Voltage—See Screen Rating Chart			
Positive DC Grid-Number 1 Voltage.....	0	0	Volts
Plate Dissipation.....	3.0	2.5	Watts
Screen Dissipation.....	1.0	....	Watts
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component.....	100	100	Volts
Total DC and Peak.....	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak.....	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias.....	0.25	0.5	Megohms
With Cathode Bias.....	1.0	1.0	Megohms

BASING DIAGRAM



EIA 9DX

TERMINAL CONNECTIONS

Pin 1—Triode Cathode

Pin 2—Triode Grid

Pin 3—Triode Plate

Pin 4—Heater

Pin 5—Heater

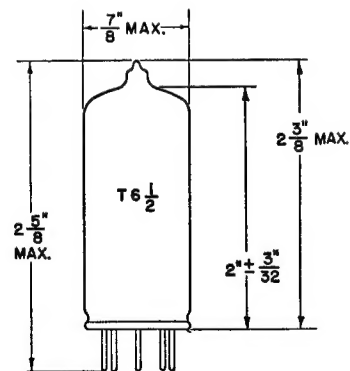
Pin 6—Pentode Cathode, Grid
Number 3, and Internal
Shield

Pin 7—Pentode Grid Number
1

Pin 8—Pentode Grid Number
2 (Screen)

Pin 9—Pentode Plate

PHYSICAL DIMENSIONS



EIA 6-3

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

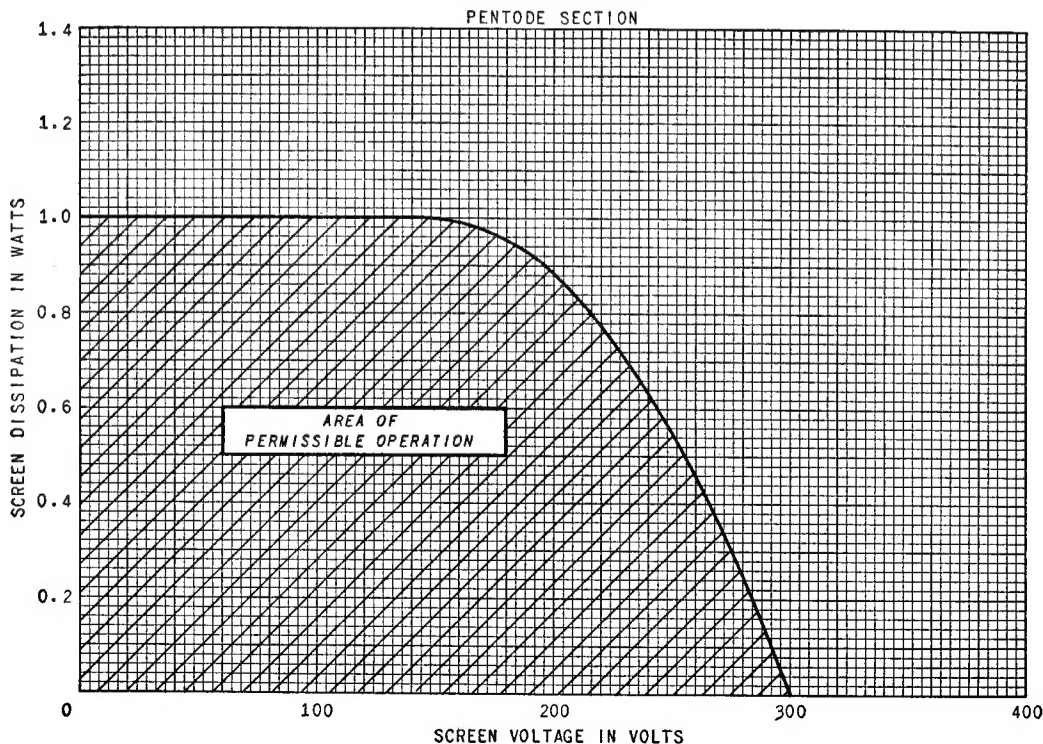
		Pentode Section	Triode Section	
Plate Voltage	200	40	150	Volts
Screen Voltage	125	125	....	Volts
Grid Voltage .....	....	0	....
Cathode-Bias Resistor	82	....	150	Ohms
Amplification Factor .....	....	....	43	
Plate Resistance, approximate	100,000	....	8100	Ohms
Transconductance	8000	....	5300	Micromhos
Plate Current	17	30	9.5	Milliamperes
Screen Current	3.4	10.6	....	Milliamperes
Grid-Number 1 Voltage, approximate I _b = 100 Microamperes	-7.5	....	-6.5	Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† Without external shield.

Note: The triode section of the 6AU8-A may be diode-connected and employed as a high-perveance diode in video detector applications. The diode operation can be obtained either with the triode grid connected to the triode plate and the combination operated as the plate of the diode, or with the triode plate grounded and the triode grid operated as the plate of the diode.

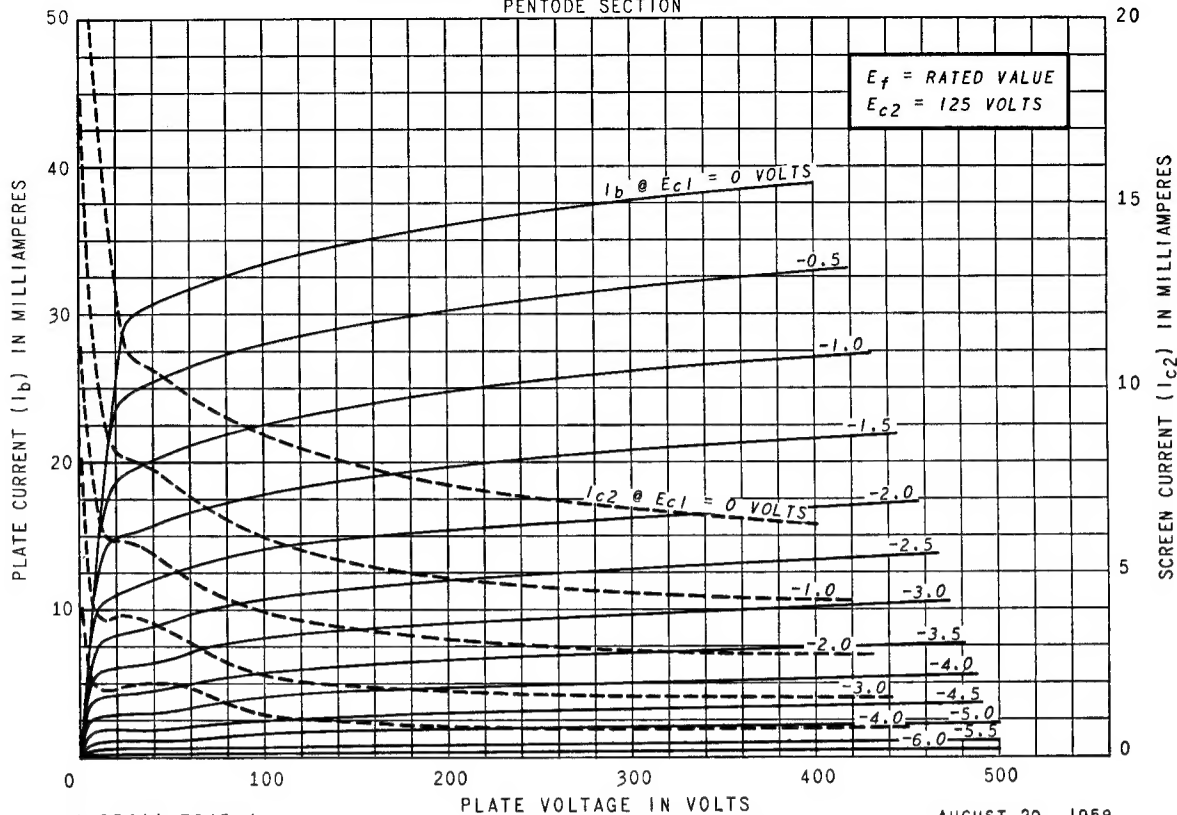
SCREEN RATING CHART



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AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION

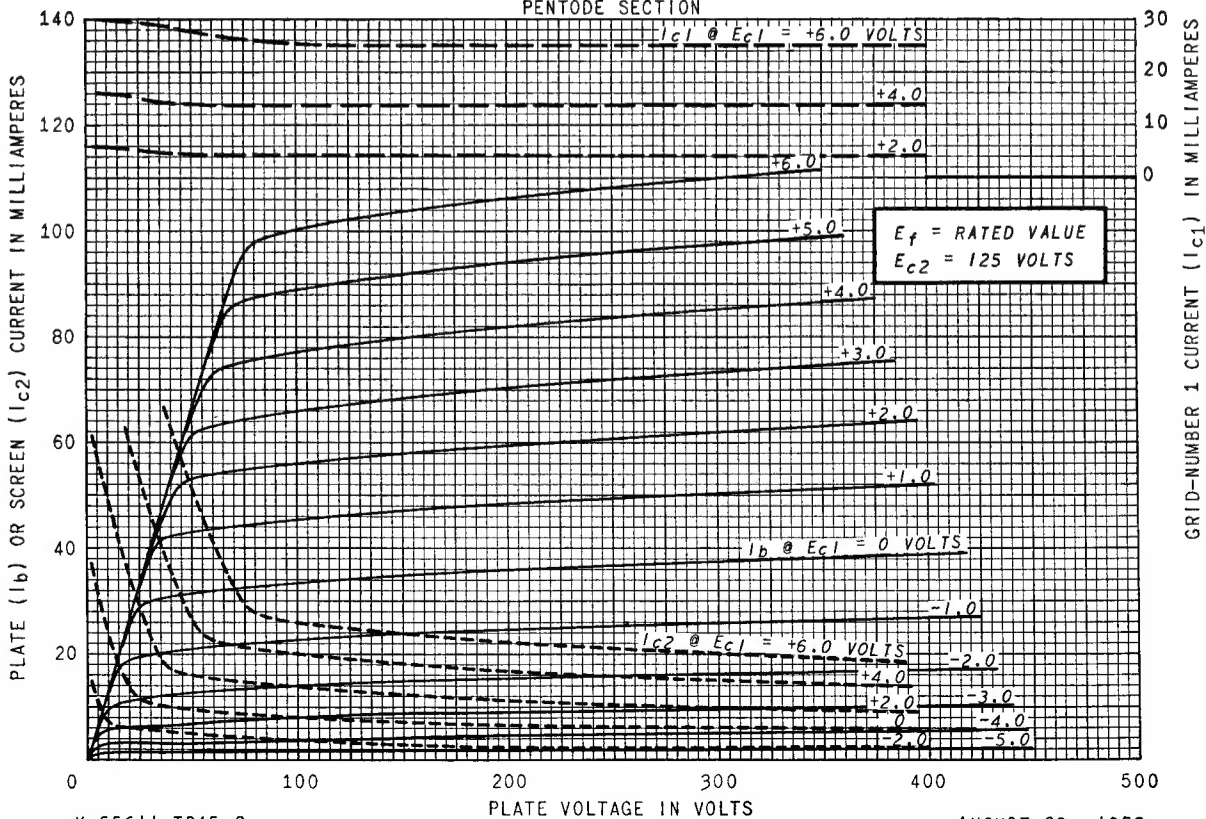


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AVERAGE PLATE CHARACTERISTICS

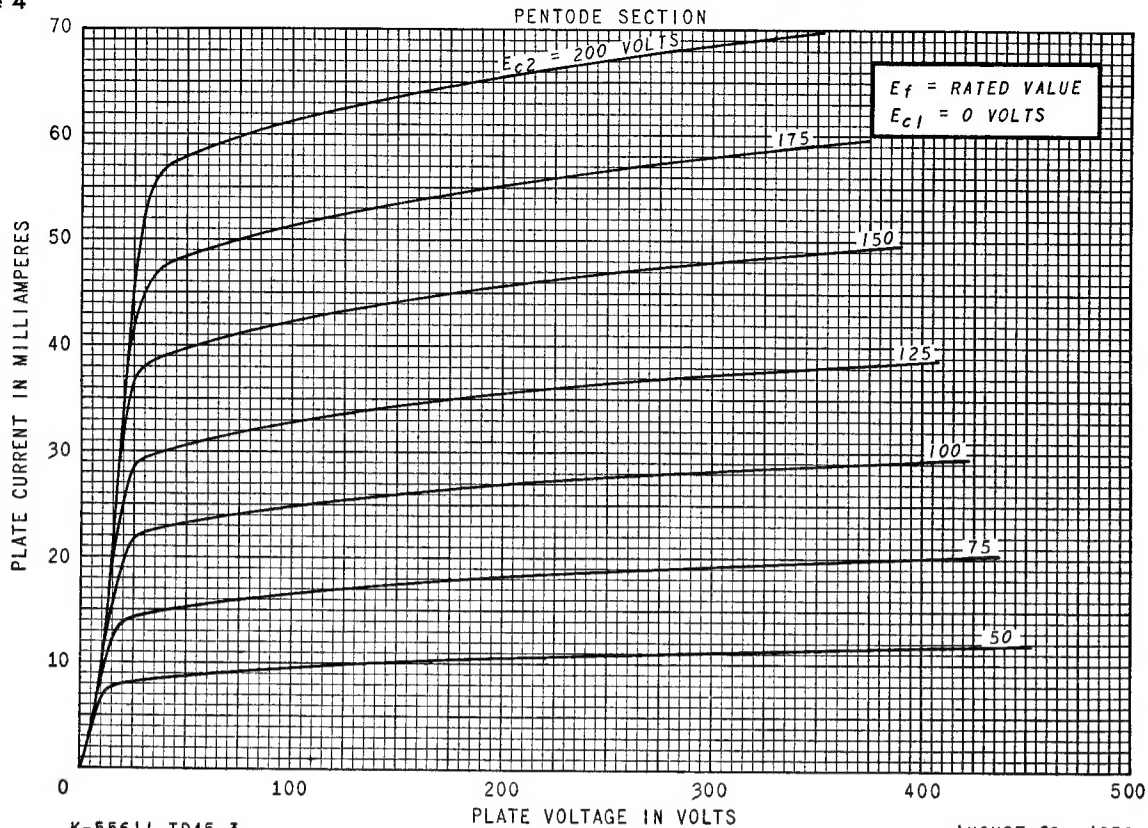
PENTODE SECTION



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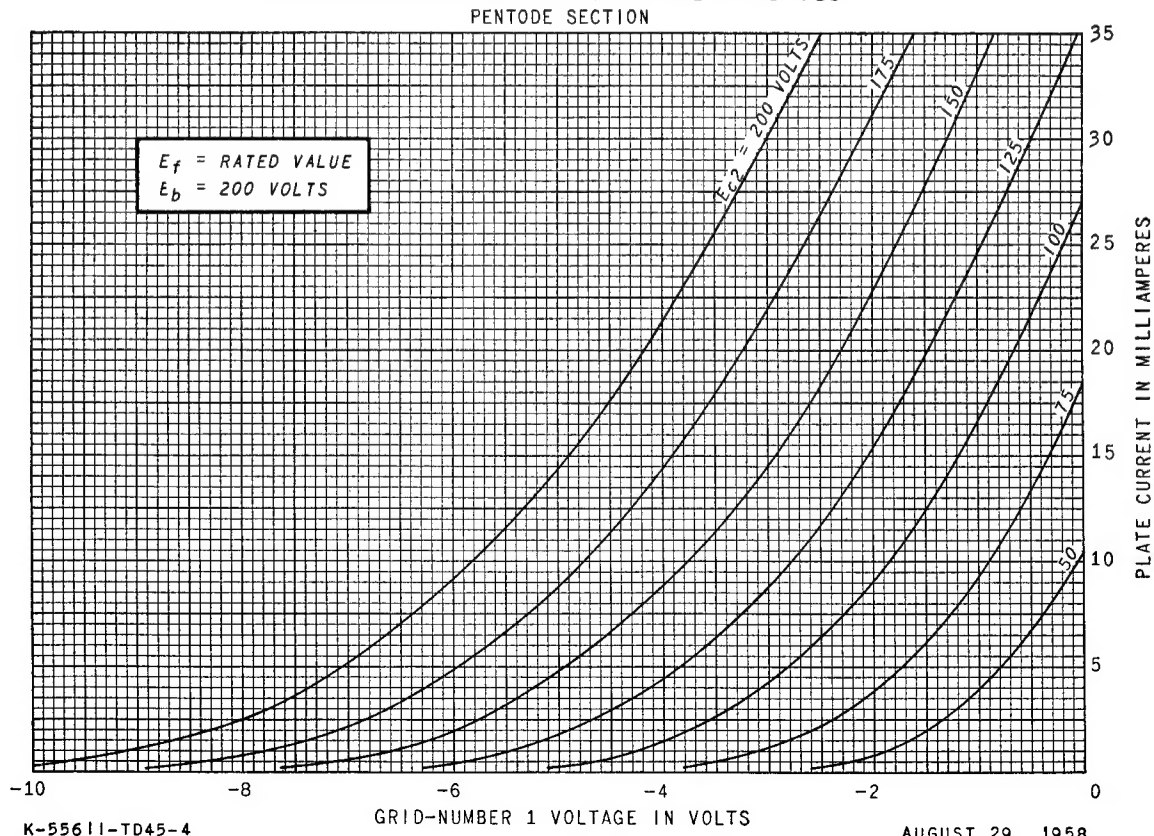
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AVERAGE PLATE CHARACTERISTICS



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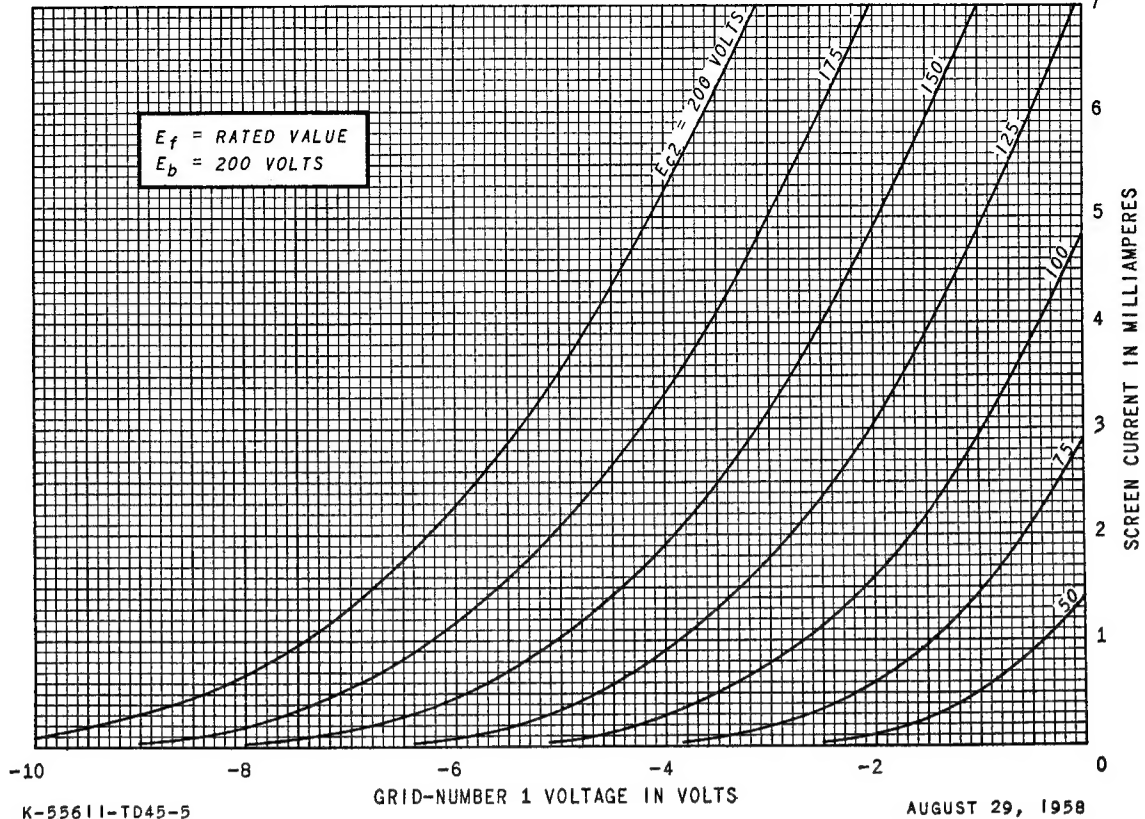
AVERAGE TRANSFER CHARACTERISTICS



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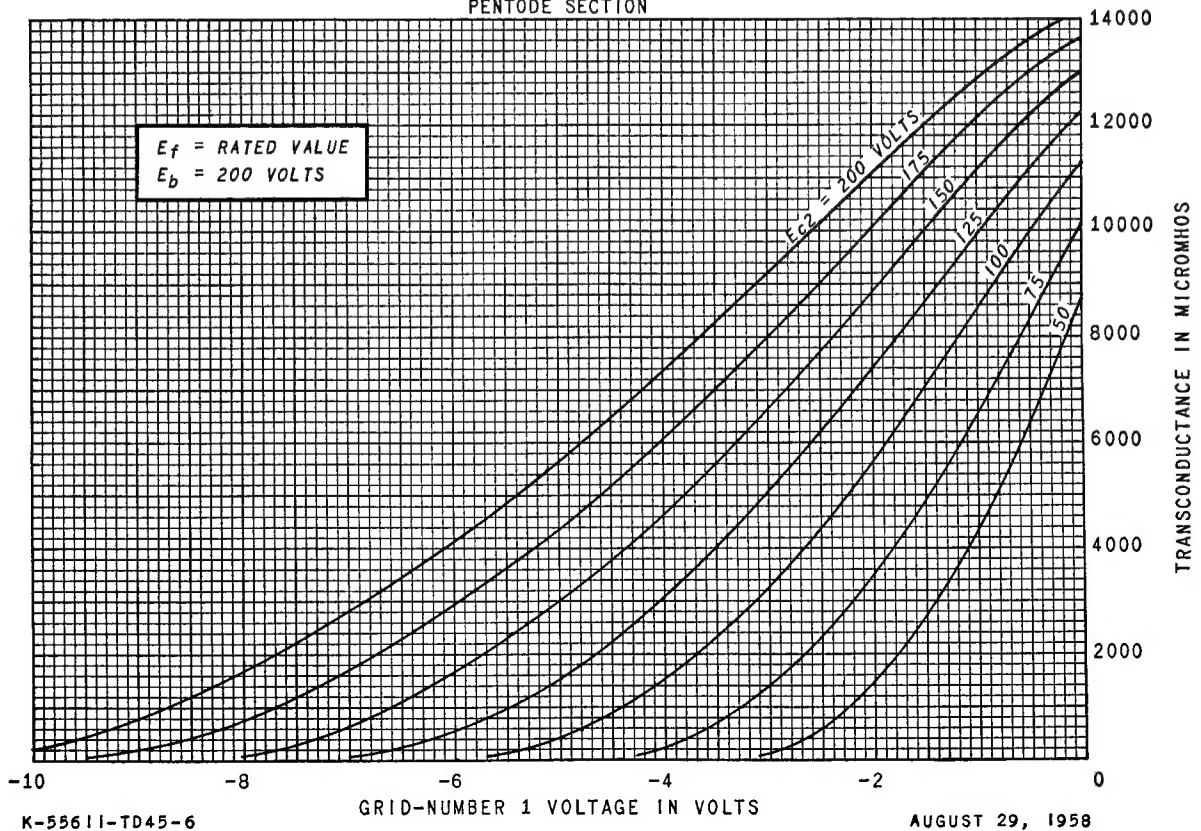
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



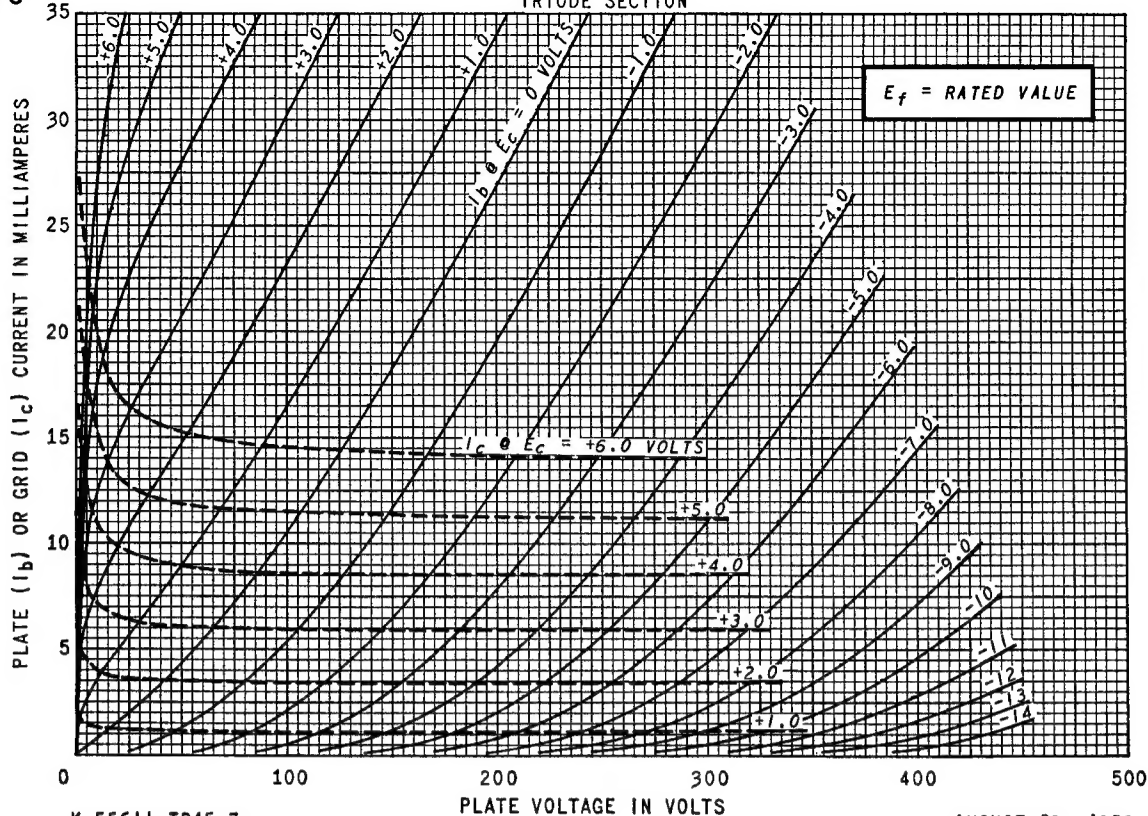
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



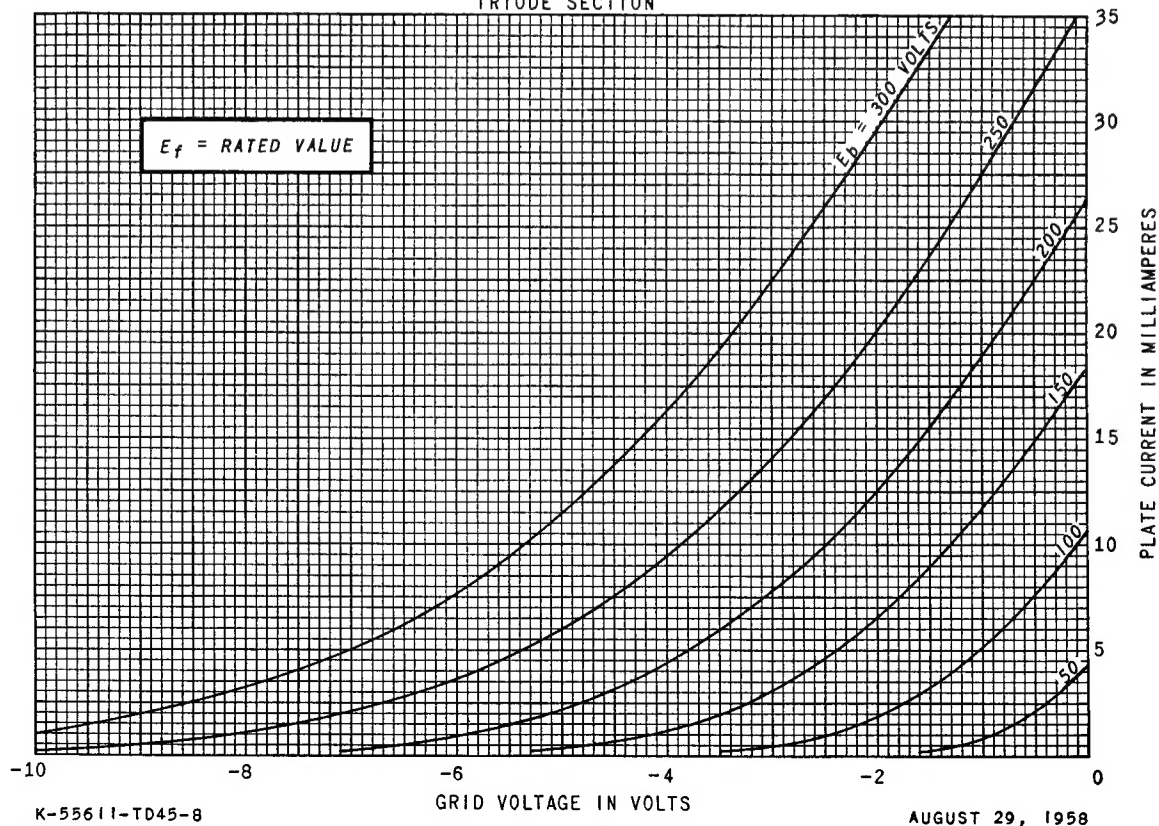
AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION



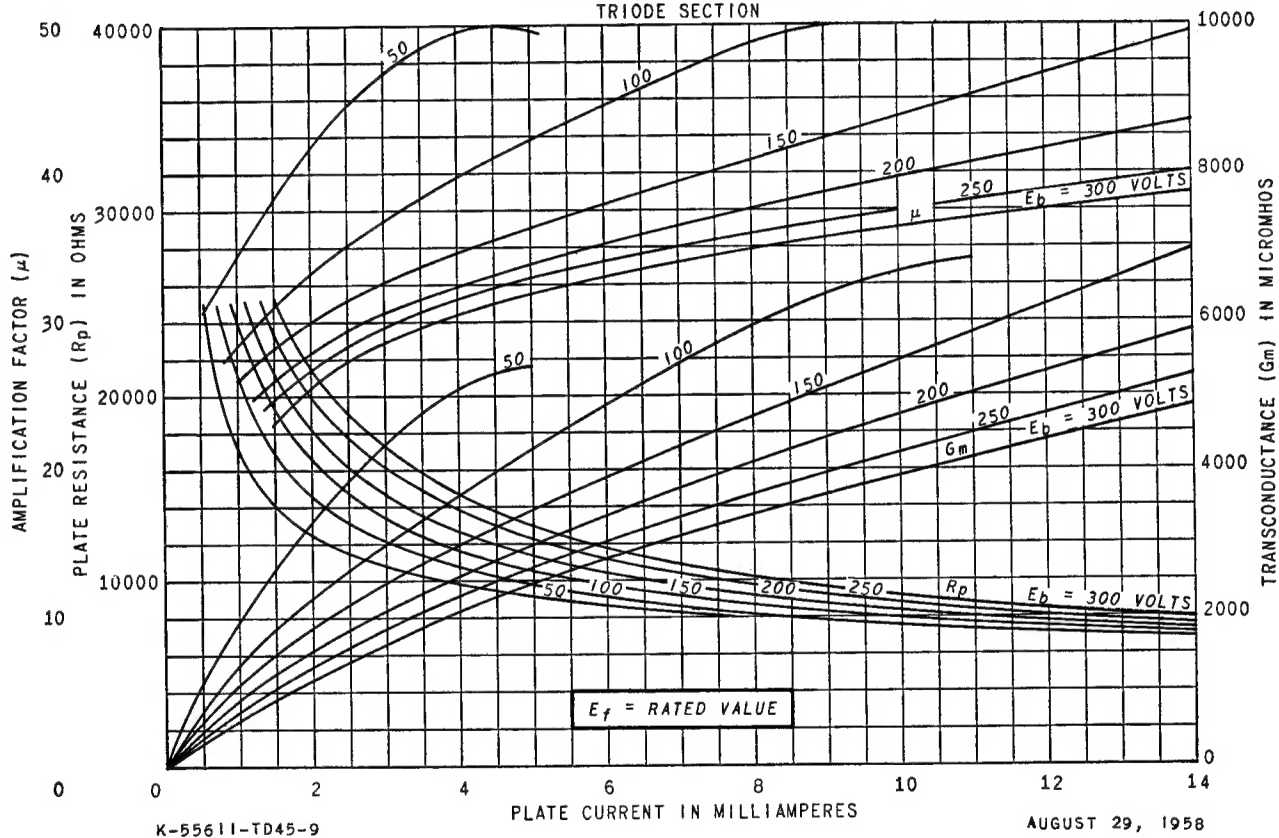
AVERAGE TRANSFER CHARACTERISTICS

TRIODE SECTION



AVERAGE CHARACTERISTICS

TRIODE SECTION



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